

# PGL Capital Construction Program

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	Quantity Adjustments	Cost Impact	Total
<b>2010 Testimony Estimate - NPV</b>			<b>\$2,467,500,000</b>
NPV / Escalation Adjustment	-		<u>(\$180,750,000)</u>
<b>2010 Base Estimate</b>			<b>\$2,286,750,000</b>
<b>Safety</b>		\$758,000,000	\$758,000,000
<b>Program Management / Engineering</b>		\$780,750,000	\$780,750,000
<b>Scope Changes</b>		\$427,250,000	\$427,250,000
<i>Additional Miles of LP</i>			
<i>Mains - Installation</i>	400 Miles	\$311,250,000	
<i>Services</i>	12,210 Services	\$39,750,000	
<i>Meters</i>	42,673 Meters	\$66,750,000	
<i>Additional Outside Meters</i>	71,972 Meters	\$112,250,000	
<i>High Pressure miles</i>	(24 miles)	(\$102,750,000)	
<b>External Factors</b>		\$1,002,250,000	\$1,002,250,000
<i>CDOT Rev 1</i>		\$367,500,000	
<i>CDOT Rev 2</i>		\$634,750,000	
<b>Cost Changes</b>		\$767,750,000	\$767,750,000
<i>Unit Rates</i>		\$420,250,000	
<i>PGL Material / Labor</i>		\$266,000,000	
<i>Rail Crossing Costs</i>		\$81,500,000	
<b>Escalation</b>	-	\$1,293,250,000	\$1,293,250,000
<b>2015 Estimated Cost</b>			<b>\$7,316,000,000</b>
Risk based reserve - Contingency			\$879,000,000
<b>Total Estimated Program Cost</b>			<b>\$8,195,000,000</b>

DRAFT WORK PRODUCT

RSP\_000546

# PGL Capital Construction Program

## Quantity Reconciliation

	2010 Estimate Basis	2012 Estimate Update	Delta 2010-2012	2015 Estimate Basis	Delta 2012-2015	PTD through 12/31/14	To Go 01/01/15
<b>Mains Retire</b>	<b>2,157</b>	<b>2,157</b>	<b>0</b>	<b>2,359</b>	<b>202</b>	<b>268</b>	<b>2,092</b>
<i>CI/DI+ST/PL LP</i>	<i>2,157</i>	<i>2,157</i>	<i>0</i>	<i>2,157</i>	<i>0</i>		
<i>Carryover pre-2010<sup>1</sup></i>				<i>47</i>	<i>47</i>		
<i>All LP – non CI/DI</i>				<i>155</i>	<i>155</i>		
<b>Mains Install</b>	<b>3,056</b>	<b>3,056</b>	<b>0</b>	<b>3,456</b>	<b>400</b>	<b>575</b>	<b>2,881</b>
<i>AMRP</i>	<i>3,056</i>	<i>3,056</i>	<i>0</i>	<i>3,056</i>	<i>0</i>		
<i>Carryover pre-2010</i>				<i>90</i>	<i>90</i>		
<i>All LP– non CI/DI</i>				<i>310</i>	<i>310</i>		
<b>High Pressure</b>	<b>63</b>	<b>63</b>	<b>0</b>	<b>39</b>	<b>-24</b>	<b>7</b>	<b>32</b>
<b>Services</b>	<b>296,392</b>	<b>296,392</b>	<b>0</b>	<b>308,600</b>	<b>12,208</b>	<b>45,978</b>	<b>262,622</b>
<i>AMRP</i>	<i>296,392</i>	<i>296,392</i>	<i>0</i>	<i>296,392</i>	<i>0</i>		
<i>Carryover pre-2010</i>				<i>3,050</i>	<i>3,050</i>		
<i>Services for add'l LP – non CI/DI</i>				<i>9,158</i>	<i>9,158</i>		
<b>Meters</b>	<b>406,977</b>	<b>406,977</b>	<b>0</b>	<b>521,572</b>	<b>114,595</b>	<b>77,453</b>	<b>444,119</b>
<i>AMRP</i>	<i>406,977</i>	<i>406,977</i>	<i>0</i>	<i>406,977</i>	<i>0</i>		
<i>Carryover pre-2010</i>				<i>2,630</i>	<i>2,630</i>		
<i>Meters for add'l LP – non CI/DI</i>				<i>7,890</i>	<i>7,890</i>		
<i>Revised quantity of inside meters<sup>3</sup></i>				<i>104,075</i>	<i>104,075</i>		

<sup>1</sup> 2010 estimate was predicated on an agreed upon quantity of mains, services and meters being replaced prior to program commencing.

<sup>2</sup> Prior to 2015, estimates excluded other LP steel and plastic pipe.

<sup>3</sup> Increased number of inside meters to move outside.

# PGL Capital Construction Program

## *Select Assumptions*

### **2010**

- PGL provided quantities and unit rates
- Final value included escalation, then discounted back for a NPV
  - Labor escalated at 4% (90% of construction cost)
  - Material escalated at 3% (10% of construction cost)
- No Contingency
- An estimated amount of work between 2008-2010 was excluded from the estimate
- No G&A Costs included
- PMO costs were incremental and did not include cost of existing staff
- All inside meters located in buildings with 6 or more units would remain in place
- Continued use of current CM practices
- Planning / Design / Construction management would be completed with existing resources
- After 2010, additional labor would be necessary for PMO

### **2012**

- Same quantities from 2010, Unit Rates increased (factored up) based on Program to Date experience
- Escalation removed, contingency excluded
- 38% change order factor added to mains and services
- 40% added to address CDOT Rev 1 mains and services
- 3<sup>rd</sup> party engineering costs included
- Means and methods shifted to Open Cut

### **Current**

- PGL provided quantities
  - Increased for LP non CI/DI
  - Increased for work not completed in 2008-2010
  - Increase for CDOT rev2 requirements
- Unit rates reflect Program to Date experience
- Escalation Included (average 3.1%)
- Contingency Identified
- Means and methods include direct bore for select pipe sizes
- 25% of inside meters located in buildings with 8 or more units would remain in place. This is an increase in the number of meters moved.

## Assessment of the Capital Model

- RFP created for the independent review and validation of the Capital Construction Model.
- Cotter Consulting selected
- Bid has been awarded.
- \$102K
- Project completion – July 17<sup>th</sup>.

# PGL Capital Construction Program

## Estimate Reconciliation

	A	B	C = A + B	D	E	F = C + D + E
	2010	Changes	2012	Base Scope Changes	New Scope	2015
<b>Estimates</b>	<b>\$2,467,500,000</b>	<b>\$2,007,500,000</b>	<b>\$4,475,000,000</b>	<b>\$289,250,000</b>	<b>\$1,109,250,000</b>	<b>\$5,873,500,000</b>
NPV / Escalation Adjustment	(\$181,000,000)					
Adjusted 2010 Estimate	<b>\$2,286,500,000</b>					
Escalation	\$793,500,000					
<b>Total - 2010 Project Cost</b>	<b>\$3,080,000,000</b>					
<i>Professional Services</i>						
Design Consultants <sup>1</sup>		\$188,250,000		(\$116,250,000)		
PGL / PMO		\$500,000,000		\$59,500,000		
<i>Means and Methods Adjustments<sup>2,3</sup></i>						
Post Camera Safety		\$272,250,000				
Open Cut / Direct Bore ratio		\$679,500,000		(\$233,500,000)		
<i>Unit Rate adjustment - reflect program to date</i>				\$579,500,000		
<i>Added Scope - CDOT Rev 1</i>		\$367,500,000				
<b>Sub Total</b>			\$4,475,000,000			
<i>Escalation<sup>4</sup></i>			\$1,365,000,000			\$1,293,500,000
<b>Total - 2012 Project Cost</b>			<b>\$5,840,000,000</b>			
<i>Added Scope - Mains and meters</i>						
Additional LP + 2008-2010 scope					\$558,000,000	
CDOT Rev 2					\$699,000,000	
<b>Total - 2015 Project Cost</b>						<b>\$7,315,000,000</b>
<i>Risk Based Contingency</i>						\$880,000,000
<b>Total Estimated Project Cost</b>						<b>\$8,195,000,000</b>

1 Percentage of design costs / capital costs changed from 2012 to 2015 based on program to date experience.

2 Between 2010 and 2012, there was a shift in main installation means and methods, with an increase in open cut installation and decrease in directional boring.

3 Between 2012 and 2015, there was a shift back to a larger percentage of directional boring, which reduced the installation cost

4 Escalation at ~3.1% per annum

# PGL Capital Construction Program

## Year to Date

### Current year (2015) - January through March

Activity	2015 Plan Total	Actual to date	Actual % Complete	Planned % Complete
Mains (miles)	153	4.8	3.2%	8.2%
HP (miles)	3	1.7	53.9%	8.2%
Services (ea)	14,522	1,758	12.1%	8.9%
Meters (ea)	25,000 / 41,192	5,591	22.4% / 13.6%	18.5%
Retirement (miles)	100	14.8	14.8%	14.3%

## Program to Date

### Prior and Current Year Progress (2011 - 2015)

Activity	Program Total	Actual to Date	Actual % Complete	Planned % Complete
Mains (miles)	3,456	569.5	16.5%	14.5%
HP (miles)	39	8.4	21.5%	14.5%
Services (ea)	308,600	47,676	15.4%	14.5%
Meters (ea)	521,572	83,044	15.9%	18.8%
Retirement (miles)	2,359	292.2	12.4%	14.9%

- Program Planned % Complete is based on a 5 year ramp up starting in 2011 and a 2 year ramp down except for meters.
- Meters need to match corresponding planned services and related number of meters for each service.
- Approximately 15,000 meters need to be installed to catch up with prior service installations.
- Note: 2015 and future years will require 6% annual completion of Program totals for a 20 year completion.